

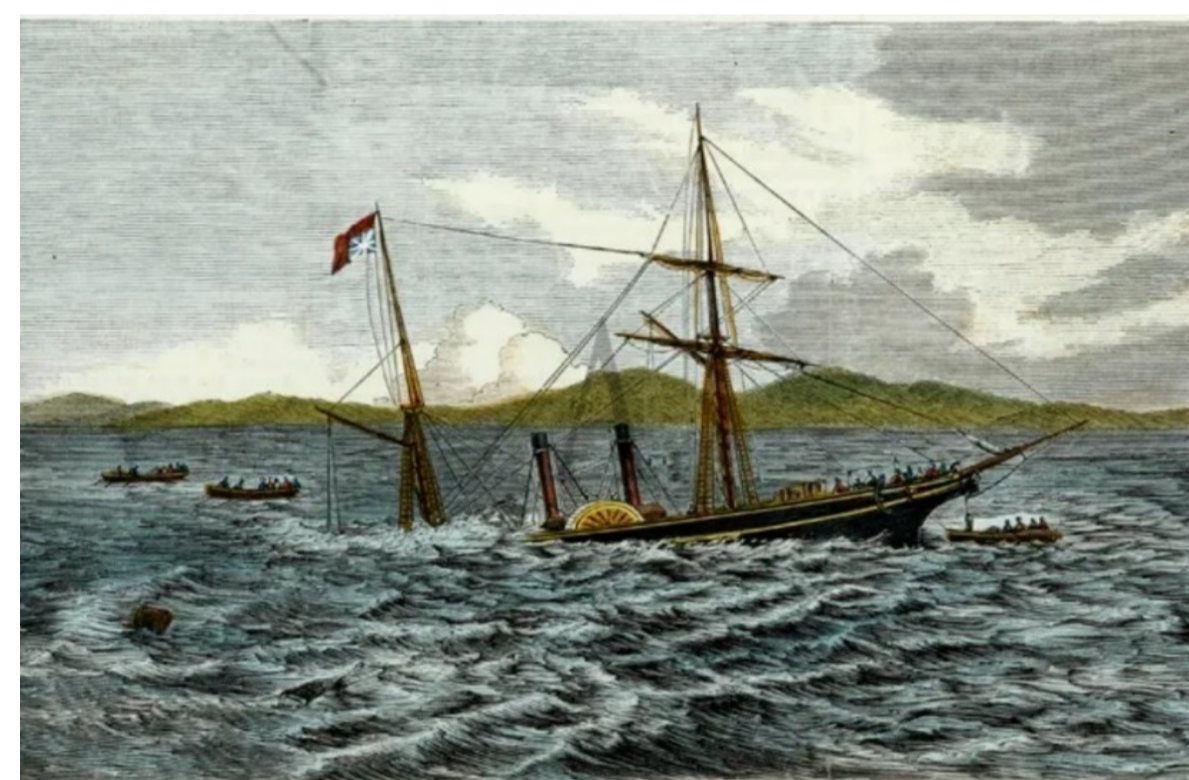
# PORT OF CLARENCE - A Working River Port for Over 150 Years

## The Clarence River Mouth

Matthew Flinders was the first European to enter the Clarence estuary in 1799. He described it as “a wide shoal bay”. By the early 1840s, settlers were taking advantage of the fertile floodplains for farming and cutting timber for construction. Shipping was the only practical method of cargo transport in the 19<sup>th</sup> century. Unfortunately, the Clarence bar was a hindrance to shipping. Crossing the bar was extremely hazardous with disastrous results. Ships could be bar-bound for days until safe crossing was possible.

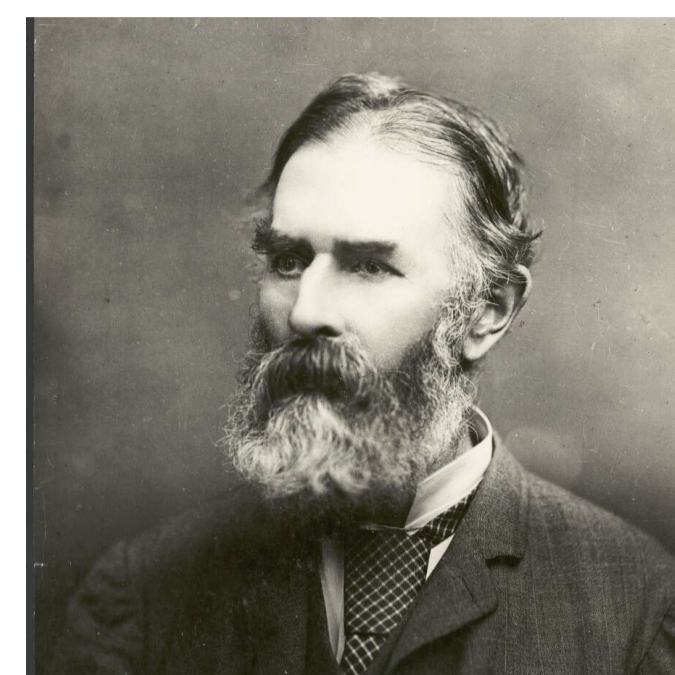
Hazards included shifting channels and sand banks, and a reef immediately offshore.

The strong prevailing south-easterly and northerly summer winds, combined with large ebb and flood tide flows continually moved the sand.



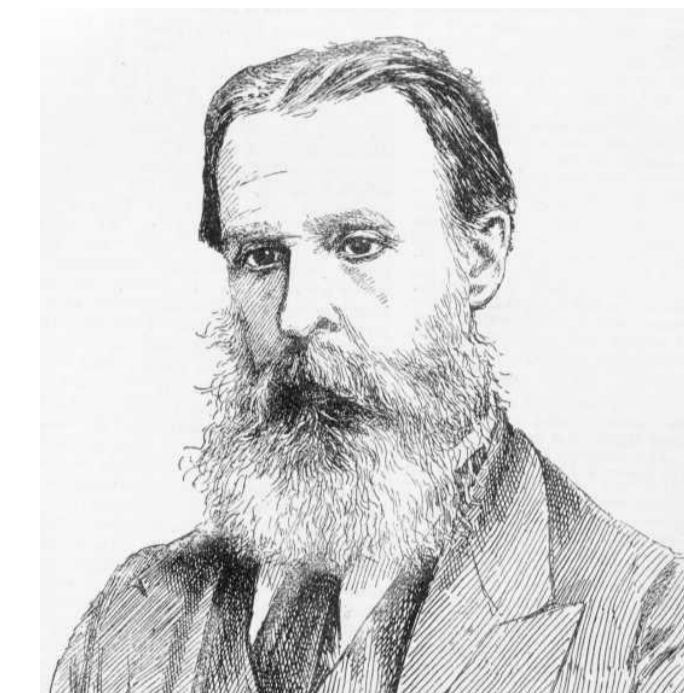
1866 *Urara* wrecked on the bar

## The Engineers



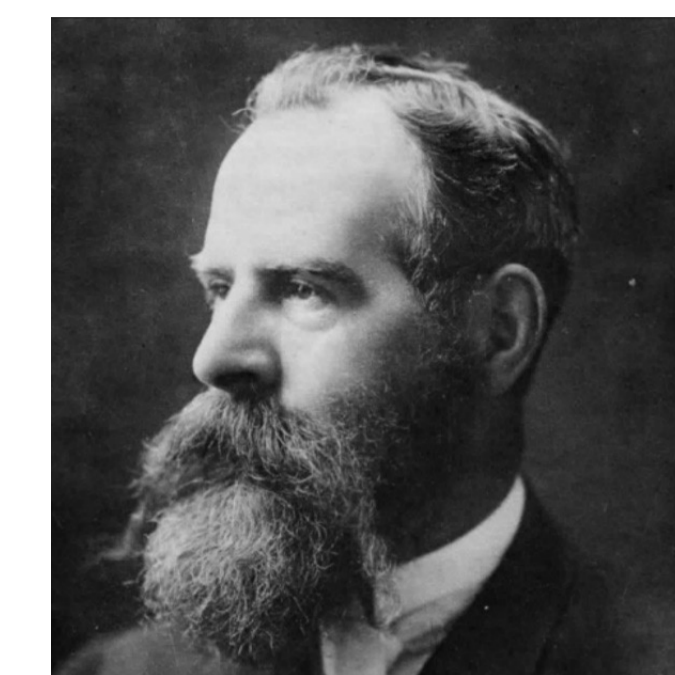
**Edward MORIARTY**  
(1825 – 1896)

Moriarty initiated the first works in 1862 by constructing short breakwaters and rock training walls. Part of the north training wall is now called “Moriarty’s Wall”.



**Sir John COODE**  
(1816 - 1892)

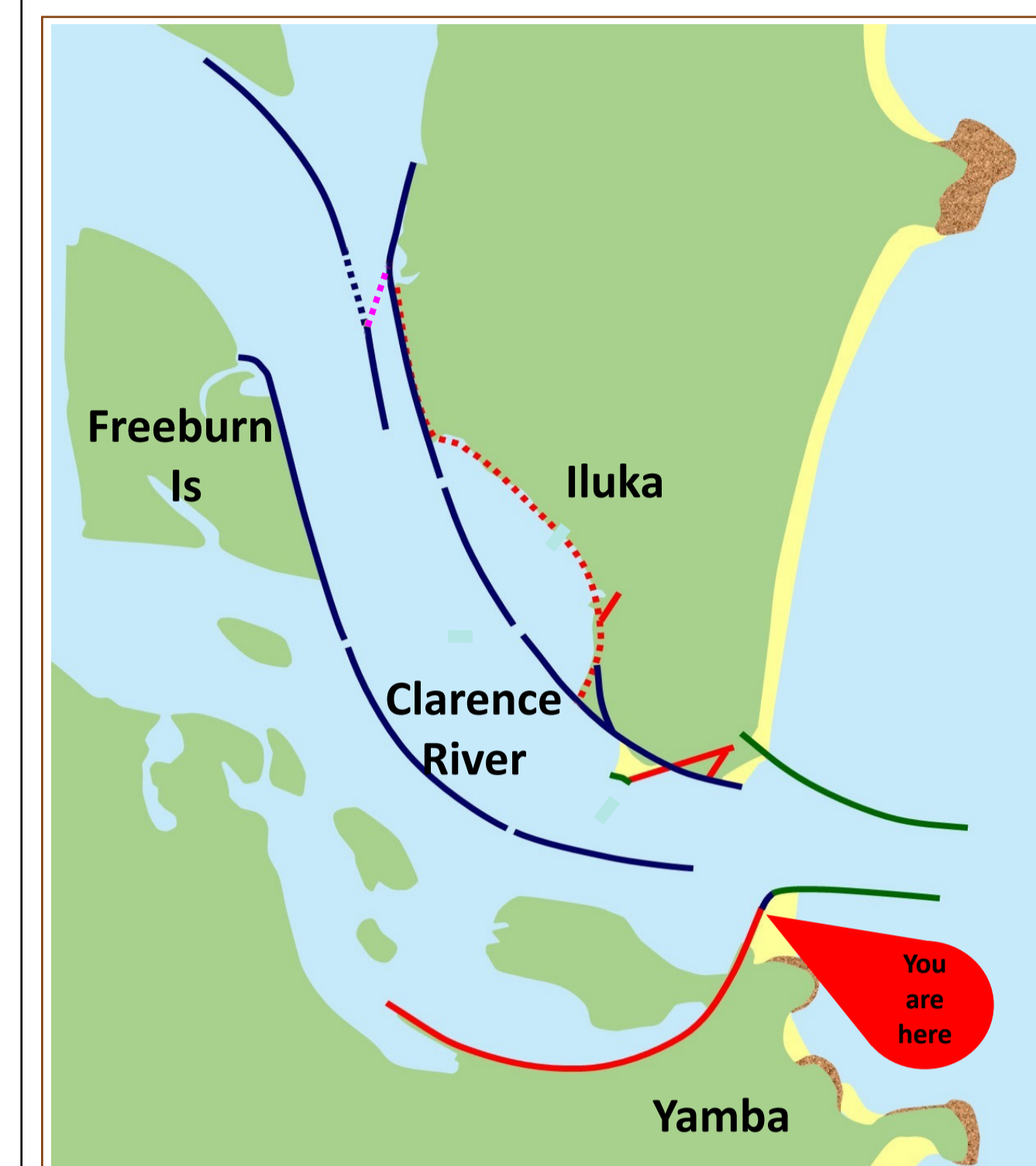
Coode, a British harbour engineer, recommended two piers as breakwaters, training walls and reef removal. Only partly implemented, these works have provided a relatively stable entrance bar.



**Cecil DARLEY**  
(1842 - 1928)

Darley initially worked under Moriarty, and was then promoted as the Public Works Department’s Engineer-in-Chief for Harbours and Rivers. He was responsible for implementing Coode’s scheme.

## As Constructed

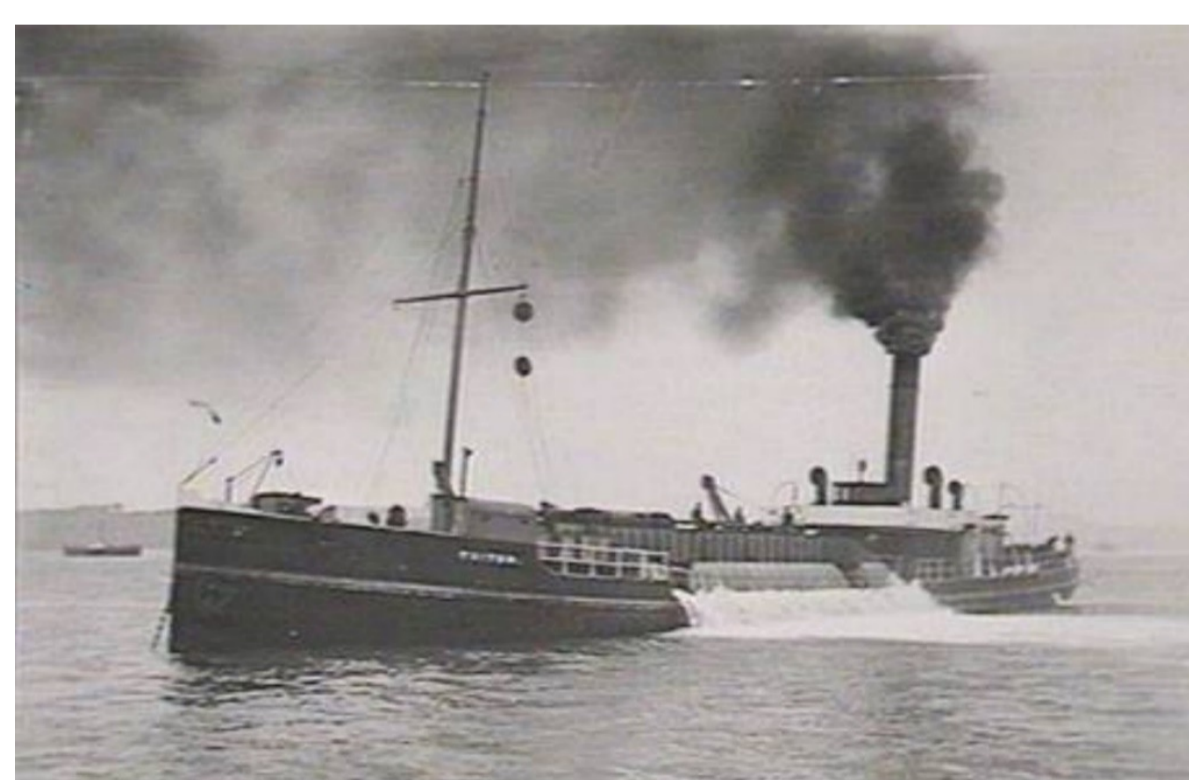


Clarence River  
breakwater works

## Port of Clarence Engineering Works

In the early days of developing the coast and tablelands of Northern NSW, people and goods were shipped between the Clarence Valley and Sydney and vice-versa. This trade was made safer and more reliable by engineering works to the Port of Clarence, which began in 1862.

The Clarence River valley local road network serviced wharves in towns along the river including Yamba, Maclean, Lawrence, Ulmarra and Grafton. A dredging fleet was used to keep channels open.



*Triton* dredge

A dry dock was built at Ashby for maintaining the dredges and other vessels.

The shipping trade prospered until the Grafton to Sydney railway was completed in 1923. As well, road transport was becoming more convenient. Regular shipping to Sydney finished about 1954.

Modern ships increased in size and were unable to cross the bar. Some local coastal shipping continued, but it was transferred to Newcastle or Port Macquarie when dredging stopped.

## Lights and Lighthouses

In 1854, the first pilot station was established on Pilot Hill. The first navigation light aids at the river mouth were kerosene lamps attached to poles on the hill. This was later upgraded to a beacon about 1870. The first lighthouse was built in 1879, and replaced by the present lighthouse in 1955.



1902 – Yamba Lighthouse

## Engineering Design Evolution

The Port of Clarence served as a “prototype” for other NSW river entrance works. Early engineers learned by trial and error in their attempts to maintain navigable channels through river entrances. Later maritime engineers had access to physical and computer models to optimise designs.

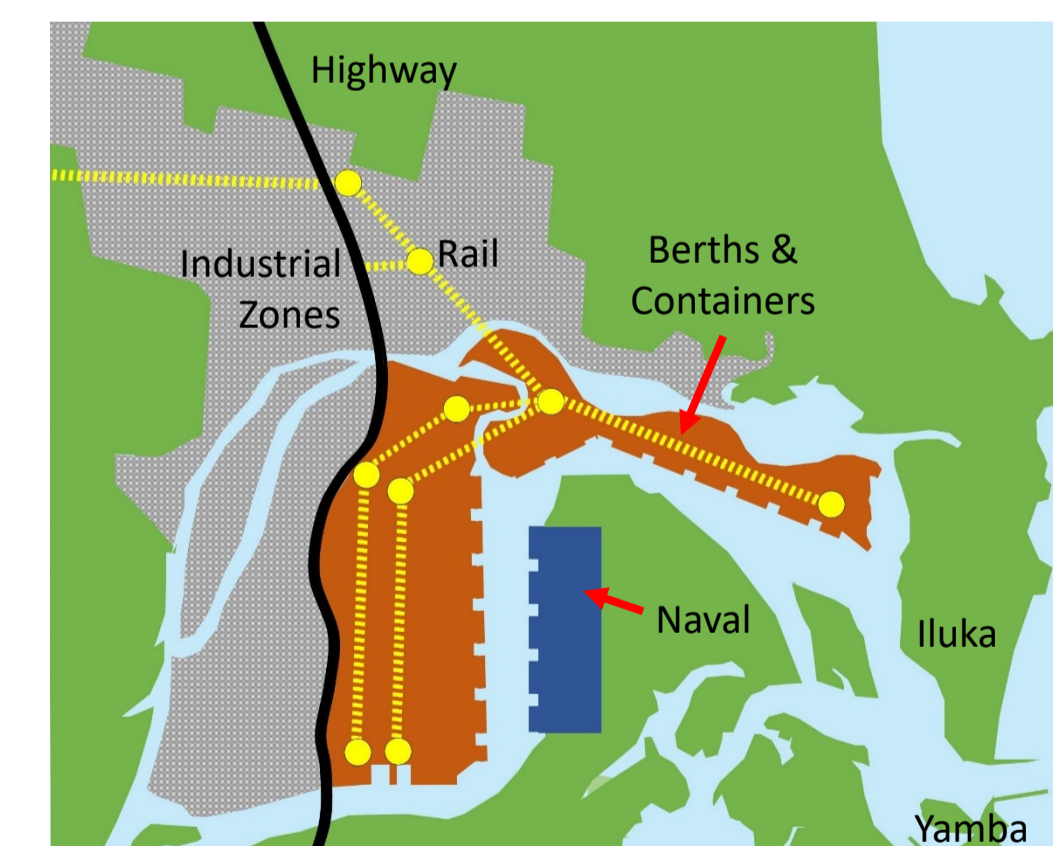
The Port of Clarence entrance works were constructed in four stages (see map top right):

- |    |           |                                      |
|----|-----------|--------------------------------------|
| 1: | 1862-1889 | Moriarty’s Scheme, (red)             |
| 2: | 1893-1903 | Coode’s Scheme, (blue)               |
| 3: | 1914-1917 | Works, (purple)                      |
| 4: | 1950-1971 | Clarence Harbour Works Act. (green). |

## Desires for a ‘Deep-Sea’ Port

There have been many proposals to develop the Clarence as a major port. In 1926 the Federal Government commissioned a report by English engineer Sir George Buchanan, which suggested that “the Clarence River should rank next in importance to Melbourne in plans for future Australian port development”.

The Clarence Harbour Works Act (1950) proposed a deep-sea port. However, these plans fell away as the Port of Newcastle increased in importance in the 1960s. Development proposals over the years have been hampered by the lack of adequate transport infrastructure (i.e. road and railway access to the hinterland).



2016 Megaport proposal

The huge costs to keep the bar permanently safe in all weather conditions have also hindered development.

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